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Evaluating quantities

Erin Zaroukian • zaroukian@cogsci.jhu.edu • Johns Hopkins University

Abstract

Goal: Explain the meaning and distribution of *a good* as a numeral modifier, as in (1)

(1) John read a good ten books.

Proposal:

- *A good* conveys that the speaker believes the quantity expressed is
  - 'a lot'
  - likely
- These can conflict with contributions of other modifiers to restrict its distribution
- *A good* is a parameterized determiner, which further limits its distribution

Puzzle

Q: Why does *a good* give rise to the felicity pattern in (2)?

(2) a. John read about a good ten books.
b. John read at least a good ten books.
c. #John read at most a good ten books.
d. ?John read more than a good ten books.
e. #John read less than a good ten books.

- Naive theory: *a good* $n = \geq n$
  - But this doesn't reflect the pattern in (2)
    (e.g. (2b) doesn't seem redundant, cf. *John read at least at least ten books*)
- **Proposed theory:**
  - *A good* expresses that the speaker thinks the quantity expressed is 'a lot' – $\#x \geq d_s$
  - It also expresses that the speaker thinks the quantity expressed is likely – $\boxdot\#x = d$
    ($\boxdot$ here represents human necessity (Kratzer, 1981), i.e. true in all closest accessible worlds)
- In some ways, *a good* has a similar distribution to *at least*

(3) David is {at least/a good} 6 feet tall(er than Kate).

- But *a good* requires a quantity to directly modify, while *at least* is more flexible

(4) David is {at least/*a good} tall.
(5) John read ten books, {at least/*a good}.
(6) John read {at least/*a good} about ten books.
(7) John read about {*at least/a good} ten books.

- **Proposed theory:**
  - *A good* is a parameterized determiner (Hackl, 2000)
  - It therefore requires a degree argument and it can be modified by degree modifiers (e.g. *at least*, *about*) but cannot modify them

Hackl summary

- Accounts for attested differences between quantifiers (treated the same under a standard Generalized Quantifier approach) by decomposing them into combinations of parameterized determiners (e.g. (null) *many*) and degree quantifiers (e.g. *at least ten*)

→ I claim that *a good* is a parameterized determiner; *at least* is a degree modifier, not a parameterized determiner

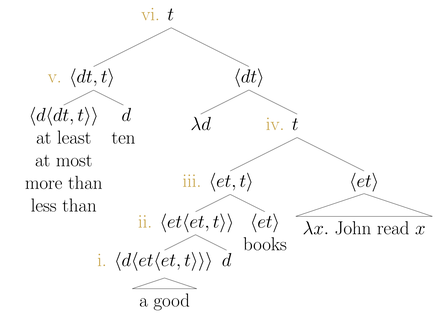
Analysis

Desiderata
- Account for the pattern in (2)
- Account for distribution in (3)-(7)

Semantics

- I treat *a good* as a parameterized determiner (Hackl, 2000) with two presuppositions
  - that the speaker believes the quantity expressed is 'a lot' (meets some salient threshold, $\#x \geq d_s$)
  - that the speaker believes the quantity expressed is likely ($\boxdot\#x = d$)

(8)



i. $[\![\textbf{a good}]\!] = \lambda d_{Card}.\lambda f_{\langle et\rangle}.\lambda g_{\langle et\rangle}.\exists x : \#x \geq d_s$ & $\boxdot\#x = d$ $[f(x)$ & $g(x)$ & x has d-many parts in $f]$
ii. $[\![\textbf{a good } d]\!] = \lambda f_{\langle et\rangle}.\lambda g_{\langle et\rangle}.\exists x : \#x \geq d_s$ & $\boxdot\#x = d$ $[f(x)$ & $g(x)$ & x has d-many parts in $f]$
iii. $[\![\textbf{a good } d \textbf{ books}]\!] = \lambda g_{\langle et\rangle}.\exists x : \#x \geq d_s$ & $\boxdot\#x = d$ $[book(x)$ & $g(x)$ & x has d-many parts in $book]$
iv. $[\![\textbf{John read a good } d \textbf{ books}]\!] = \exists x : \#x \geq d_s$ & $\boxdot\#x = d$ $[book(x)$ & $read(j, x)$ & x has d-many parts in $book]$
v. $[\![\textbf{at least ten}]\!] = \lambda D_{\langle dt\rangle}.\Box D(10)$ & $\diamond\,[\exists m > 10 : D(m)]$ (cf. Geurts and Nouwen, 2007)
$[\![\textbf{at most ten}]\!] = \lambda D_{\langle dt\rangle}.\diamond D(10)$ & $\neg\diamond\,[\exists m > 10 : D(m)]$
$[\![\textbf{more than ten}]\!] = \lambda D_{\langle dt\rangle}.\#(\lambda n.D(n)) > 10$
$[\![\textbf{less than ten}]\!] = \lambda D_{\langle dt\rangle}.\#(\lambda n.D(n)) < 10$
vi. $[\![\textbf{(2b)}]\!] = \Box[\exists x : \#x \geq d_s$ & $\boxdot\#x = 10$ $[book(x)$ & $read(j, x)$ & x has 10-many parts in $book]]$ &
$\diamond[\exists m > 10[\exists x : \#x \geq d_s$ & $\boxdot\#x = m$ $[book(x)$ & $read(j, x)$ & x has m-many parts in $book]]]$

$[\![\textbf{(2c)}]\!] = \Box[\exists x : \#x \geq d_s$ & $\boxdot\#x = 10$ $[book(x)$ & $read(j, x)$ & x has 10-many parts in $book]]$ &
$\neg\diamond[\exists m > 10\,[\exists x : \#x \geq d_s$ & $\boxdot\#x = m$ $[book(x)$ & $read(j, x)$ & x has m-many parts in $book]]]$

$[\![\textbf{(2d)}]\!] = \#(\lambda n.[\exists x : \#x \geq d_s$ & $\underline{\boxdot\#x = n}$ $[book(x)$ & $read(j, x)$ & x has n-many parts in $book]])\underline{\geq 10}$

$[\![\textbf{(2e)}]\!] = \#(\lambda n.[\exists x : \#x \geq d_s$ & $\boxdot\#x = n$ $[book(x)$ & $read(j, x)$ & x has n-many parts in $book]]) < 10$

Patterns in (2): (2c)-(2e) highlight $\neq 10$, conflicts with $\boxdot\#x = 10$
- < 10 is highlighted in (2c), (2e) (cf. $\Box 10$ in *at least*)
- > 10 is highlighted in (2d) (cf. $\Box 10$ in *at least*)

(9) a. #Fortunately, {at most/less than} five trees were saved. (negative)
b. Fortunately, {at least/more than} five trees were saved. (positive)

(10) a. Fortunately, {at most/less than} five trees were lost. (negative)
b. #Fortunately, {at least/more than} five trees were lost. (positive)

This pattern holds for other modifiers as well:
- other prominently negative modifiers are infelicitous

(11) #barely a good ten (cf. Fortunately, John is barely sick)

- non-prominently negative modifiers (Nouwen, 2006) are felicitous

(12) almost a good ten (cf. #Fortunately, John is almost sick)

Patterns in (3)-(7):
- *a good* is a parameterized determiner
  - Takes a cardinality – *(4), *(5)
  - Can be modified by degree modifiers like *at least*, *about* – (7)
  - Cannot modify degree modifiers – *(6)

Evaluativity

- *A good* does not indicate that the speaker considers the argument to be 'good' (cf. (13))

(13) I've been sick a good two weeks now, and I've hated every second.

- Same can be seen with adverb *well*

(14) He got here {well/a good while} after ten o'clock. (Bolinger, 1972, p. 37)

- Other evaluatives contribute a more transparent meaning
  e.g. *astonishing* → high degree of 'astonishing'-ness

(15) a. The game was an astonishing four minutes/hours long.
b. The game was astonishingly long/short.

- *Good and* bridges the gap – has an 'a lot' ('thoroughly') component like *a good*, also seems transparently *good*, indicating that the speaker is pleased

(16) {%Our prank made Chris/#That prank made me} good and irritated.
(17) That {jerk/#sweetheart} is good and dead.

- I treat the non-at-issue contributions of *a good* as presuppositions, but this kind of expressive content is usually in the CI domain (Potts, 2003)
  - *A good* does not pattern straight-forwardly as either
    e.g. Its content seems independent of the at-issue content (✓CI), but does not project out of propositional attitudes (×CI)
  - *A good* also has a more grammaticalized/less transparent non-at-issue contribution ($\neq$ 'good')

Conclusions

Summary

- *A good* is a Hackl-style parameterized determiner
  - *A good* has the same distribution as a parameterized determiner – it must modify a quantity (e.g. *ten books*) and it can be modified by degree modifiers (e.g. *about*, *at least*), but it cannot modify degree modifiers
- *A good* expresses that the speaker believes that the quantity in question is 'a lot' and that it is likely
  - *A good* is not felicitous with modifiers that conflict with this likelihood component, whether by having a salient $<$ component (e.g. *at most*, *less than*, *barely*) or a salient $>$ component (e.g. *more than*)

Bigger questions

Q: What is the nature of quantifiers?
- This provides further support for a Hackl-style analysis

Q: What is the nature of conventional implicatures?
- This provides further support that it is not a uniform category

Remaining questions

Q: How does data like (18) and (19) fit in to this analysis?

(18) John read a good deal of books.
(19) John read a good many books.

Q: What relation does this have to nominal modifier?

(20) I like a good book.

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